Modern Information Technology

Course Title: Modern Information Technology	
Description	This course provides a comprehensive overview of Modern Information Technology and its role in society. Topics include the fundamentals of computer hardware and software, networking and the internet (LAN, WAN, 5G, IoT), cloud computing and virtualization, data management with SQL/NoSQL, and cybersecurity practices. Students will also explore artificial intelligence, blockchain, and quantum computing, along with modern applications such as e-governance, e-commerce, e-learning, and healthcare IT. The course concludes with future trends and ethical considerations, including green IT, privacy, and the digital divide.
Semester	Autumn 2025
Neptun code	GEIAL551-Ma
Instructor	Dr. Nasraldeen Khleel
Credit Hours	5
Attendance Requirement	Students are required to attend at least 60% of the scheduled classes to be eligible for the course signature
Examination	The examination is written, and students will receive some theoretical questions and some practical tasks from the studied material

Topics and Schedule

Lecture #	Topic
Lecture 1	Introduction to Information Technology (IT) – history and role in society
Lecture 2	Computer Hardware and Software – basics of systems, Operating System (OS), applications
Lecture 3	Networking and Internet – Local Area Network (LAN), Wide Area Network (WAN), protocols, 5G, Internet of Things (IoT)
Lecture 4	Cloud Computing and Virtualization – services, benefits
Lecture 5	Data and Databases – Big data and analytics
Lecture 6	Data and Databases – Structured Query Language (SQL) /NoSQL basics
Lecture 7	Midterm Exam
Lecture 8	Cybersecurity – Threats, encryption, firewalls, policies
Lecture 9	Artificial Intelligence (AI) and Emerging Tech – Machine Learning (ML)
Lecture 10	Artificial Intelligence (AI) and Emerging Tech –Blockchain and quantum computing
Lecture 11	Modern Applications – e-governance, e-commerce, e-learning, healthcare IT
Lecture 12	Future Trends and Ethics – green IT, privacy, digital divide

- Lecture_notes
- Exercises and Homeworks
- Questions of Midterm Exam